DOCUMENT RESUME

ED 218 578 CG 016 079

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TITLE A Typology of Relapse Promoting Situations.
SPONS AGENCY National Inst. on Drug Abuse (DHHS/PHS), Rockville, Md.
PUB DATE Mar 82
GRANT NIDA-DA-01986
NOTE 12p.; Paper presented at the Annual Meeting of the Southeastern Psychological Association (28th, New Orleans, LA, March 24-27, 1982).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adults; *Affective Behavior; *Anxiety; *Behavior Change; Behavior Patterns; Case Studies; Cluster Analysis; Crisis Intervention; Hotlines (Public); Individual Characteristics; *Smoking; *Stress Variables
IDENTIFIERS *Relapse Crises

ABSTRACT

Outcome data on smoking cessation has emphasized that most people have difficulty not in quitting smoking, but in maintaining cessation. An attempt was made to develop a more meaningful typology of relapse-promoting situations using a sample of 183 exsmokers who called a telephone hotline seeking help to stay away from cigarettes. Two higher order clusters emerged from the cluster analysis of their responses: a positive affect situation in which self-indulgence was prominent, and a negative affect situation characterized by high levels of stress and feeling of anxiety and depression. The most homogeneous subtype of exsmoker occurred when the individual was faced with smoking-related stimuli in social drinking situations. The typology of smoking motivations suggests that the enhancements of positive affects and dimunition affects are major motivators for smoking. (Author/JAC)

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A Typology of Relapse Promoting Situations

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Paper presented at the meeting of the Southeastern Psychological Association, New Orleans, March, 1982

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A Typology of Relapse Promoting Situations

Cigarette smoking is the greatest single behavioral contributor to morbidity and mortality in the United States. The 1982 Surgeon General's report concludes that stopping smoking is the most effective single action a person can take to reduce the risk of cancer. Moreover, smoking is a major risk factor for cardiovascular disease. All told, smoking contributes to an average of 1,000 deaths a day in the United States. Since the health effects of smoking were publicized widely 18 years ago, many millions of smokers have quit, and the majority of current smokers say that they would like to quit but have not been successful at doing so.

Outcome data on smoking cessation has emphasized the wisdom of Mark Twain's remark, "Quitting smoking is easy; I've done it a hundred times." We're increasingly seeing that the difficulty is not in smoking cessation but in maintenance of cessation. Typically 75% of those who quit will resume cigarette smoking within 6 months (Hunt & Matarazzo, 1973). The traditional approach to studying this problem of maintenance has been to ask "who is successful?" That is, to explore the personal characteristics of such successes which distinguishes them from failures. By and large this strategy has been unsuccessful. Particularly striking is a study by Pomerleau, Adkins, and Pertschuck (1978) in which they were able to predict cessation but were much less successful in predicting maintenance.

Another approach would ask not "who?" but "how?" This approach, attempts to understand relapse as a process. An important part of this investigational strategy is to understand the kinds of situations in which exsmokers relapse. This strategy presents methodological difficulties, as relapse occurs in the smokers' home environment, outside the scrutiny of the research laboratory. One solution has been to ask smokers to provide retrospective accounts of past relapses. While these have provided interesting insight into the relapse process, the validity of such retrospective recall data is questionable.

In the current study, reports of relapse crisis were obtained from exsmokers during or soon after their occurrence, thus minimizing the effects of distant retrospect recall. To create a channel of communication with smokers undergoing relapse crises, a telephone counseling hotline was established. Callers to the Stay Quit Line were interviewed thoroughly regarding the circumstances surrounding their relapse crises. This method yielded a large amount of data, which have been recently summarized by Shiffman (1982). The data showed that most relapse crises were associated with negative affects, particularly anxiety, anger, and depression. However, one third of relapse crises were associated with positive feeling states. One of the surprises emerging from those data was that withdrawal seemed to play a lesser role in relapse than had been anticipated. Nearly half of the relapse episodes occurred in the absence of withdrawal symtoms. The reader is referred to Shiffman (1982) for a more complete account of these data.

While comprehensive, the presentation of data in my previous paper is almost somewhat frustrating because of the univariate handling of the data. Because there are so many variables and because most of them allow for multiple responses, it becomes difficult to extrapolate from the summary of the data a clinical or common-sense description of relapse promoting situations. The purpose of the present paper is to report on an initial attempt to develop a more meaningful typology of relapse promoting situations through the use of cluster analysis.

METHODS

Subjects. The subjects of this study were 183 exsmokers who called the telephone hotline seeking help to stay off cigarettes. The sample was restricted to those who had smoked at least 10 cigarettes per day and report having abstained from smoking for at least 2 days. Before quitting, the average subject had smoked 34.5 cigarettes per day (median = 30.5) for 19.9 years (median = 17.9). The exsmokers interviewed had been abstinent for periods of time ranging up to 2 years. On the average, callers had abstained for 36.5 days, with a median abstience of 9.7 days, thus, the sample is more representative of early relapse episodes. Shiffman (1982) describes some additional characteristics of the sample.

Procedures and Analysis. Data were collected from callers to the Stay Quit Line through interviews typically lasting 20-30 minutes. See Shiffman (1982) for a detailed description of the data collection.

In order to arrive at a description of situational types cases were submitted to cluster analysis (BMDP2M Dixon and Brown, 1979), which groups cases which resemble each other on the relevant variables. A Chi square criterion was used to evaluate the cluster distances and the clusters reported were selected from the clustering tree diagram. The clustering process is hierarchial and inferative, so that like types are compared and joined until all of the cases end up in one large cluster. As a result, small clusters formed early in the process may later be combined into higher order groupings.

The following variables were entered into the analysis. A. The place in which the crisis occurred. B. The time at which the crisis occurred. C. The activity in which the subject was engaged at the time of the crisis. D. Whether or not others were present. E. Whether others present were smoking. F. Whether the subject had been eating food. G. Whether the subject had been drinking alcohol. H. The subject's rating of the stressfulness of the interval preceding the relapse crisis. I. The affect the subject had been experiencing prior to the crisis. J. The stimulus which was identified as the immediate precipitant of the relapse crisis. K. Whether the subject reported experinecing any withdrawal symptoms. The clustering algorithm requires that each case have valid values for each of the variables. As a result, only 102 cases were processed by the clustering program.

It should be emphasized that, without replication on other samples with other clustering algorithms, the results of this analysis are best viewed as heuristic and tentative rather than definitive.

RESULTS AND DISCUSSION

Two higher-order clusters emerged from the cluster analysis. These are easily identified as positive and negative a-fect situations. One cluster consists of positive affect situations in which self-indulgence is prominent. This is in contract to the negative affect situation, which is characterized by high levels

of stress and by feelings of anxiety and depression.

While these two major types of relapse situations capture the flavor of most of the episodes reported to the hotline, each is divided into subtypes. Each is characterized below by a description and by a case history which exemplifies the cluster. The cluster analysis identified three types of positive affect episodes. And two types of negative affect episodes. (See Table 1)

The Party

These crises occur during a night out at a party or tavern. In all of these cases, the exsmoker is eating and drinking alcohol in the presence of other smokers. S/he is f-eling "good" and not experiencing any withdrawal symptoms. The crisis is always triggered by smoking cues and is characterized by thoughts about testing her/himself with "just one."

Case History

Harry A. had been off cigarettes for three months after smoking 2 1/2 packs per day for 12 years. While vacationing at a resort, he stopped into a bar for a drink. He was feeling "great." Although he'd had some withdrawal difficulties early on, they had long since passed. In the course of having a couple of drinks, Harry began to notice how glamorous the smokers in the bar seemed. "I'd love a cigarette," he thought to himself. He also imagined that smoking would enhance his good feelings. A few minutes later, after striking up a conversation with a woman who was smoking, be bummed a cigarette and smoked it. In the past, he's successfully channeled his impulses to smoke, but he "just let this one go by." On returning home from vacation two days later, Harry called the Stay-Quit Line.

Unwinding at Home

In these cases, the exsmoker is home relaxing over dinner or a drink in the evening. S/he is usually feeling good but may be feeling a little tense while in the process of relaxing. S/he is not experiencing any withdrawal symptoms. Other people are sometimes present, but there is little social activity. Rarely is anyone smoking. The crisis is triggered by associations between smoking and eating or relaxation, and is marked by strong craving and by feelings of deprivation and self-indulgence.

Case History

Armand F. had been a smoker for 34 years. By the time he quit, he was consuming three packs a day. Except for his hunger for sweets, Armand hadn't been having much trouble staying off cigarettes, and had in fact been feeling proud of himself. He's been off for five days. He and his

wife were reading the paper after dinner. Armand was feeling relaxed and a bit sleepy as he unwound from the day. This brought on a craving for cigarettes, which he imagined would enhance his relaxation. He thought wistfully of the pleasure of handling and puffing a cigarette. These cravings grew stronger and stronger over the course of the next five minutes. Finally, he impulsively mooched a cigarette from his wife, who is an occasional smoker. After smoking half, he put it out. Several hours later, he smoked the rest. The next morning, he called the Stay-Quit Line.

Craving

These episodes generally take place at work in the morning. Usually the exsmoker is working, but s/he may be socializing or relaxing. S/he is usually feeling good, but, rarely, may be feeling frustrated. In any case, the exsmoker typically describes the situation as unstressful. S/he is rarely eating and never drinking alcohol. It is characteristic of this type episode that the exsmoker is suffering from withdrawal symptoms, and responds to the sight of others smoking with strong craving. This type of episode most closely resembles a classically "addictive" relapse in which withdrawal and craving play important roles.

Case History

Laura R. had been having a hard time ever since she'd quit smoking two weeks ago after 15 years of smoking a pack a day. She's been feeling lightheaded and "spacy" since the first day, and had been eating more than usual. On this morning, Laura joined the other computer operators around the vending machines for her coffee break. It had been a good morning and she felt good, although her lightheadedness continued to plague her. As some of the others lit up cigarettes, Laura inhaled some of the smoke and began to experience a strong craving for cigarettes. "They're right there within reach; I don't need to deprive myself," she thought as she reached for the pack. After smoking three cigarettes that day, she called the Stay-Quit Line.

Thus, although all positive affect episodes share the common ground of positive affect, they differ in the site where the episode occurs, in the consumption of food or alcoholic drink, in the presence of other smokers, in the prevalance of craving and withdrawal symptoms, and in the stimulus which precipitates the relapse crisis.

Work Stress

Negative affect episodes are also differentiated into subtypes. In Work Stress situations, which tend to occur in the afternoon, the exsmoker is usually working, although s/he may be at home or elsewhere. S/he may or may not be with other

people, but is never exposed to others' smoking. S/he is usually not eating or drinking anything. These episodes occur in situations w-ich are universally described as very stressful. The exsmoker is most often feeling anxious, though some report feeling angry. Few are feeling angry. Few are feeling either depressed or happy. Negative affect is always the trigger for the crisis, which is not marked by particularly strong craving. These crises usually develop in the absence of withdrawal symptoms.

Case History
Barbara M., a 30 year smoker of two packs a day, had quit after her physician advised her that smoking was the cause of her heart palpitations. She had been off cigarettes for three days without withdrawal symptoms before encountering her crisis. A legal secretary, Barbara was at her desk at 2 pm when her boss gave her urgent work to be completed in half an hour. She felt anxious and had trouble concentrating on her typing. Her mind was filled with thoughts of cigarettes. "If I could have just one cigarette, I could stand this pressure." She called the Stay-Quit Line.

Stress and Depression

These episodes usually occur while the exsmoker is at home in the morning S/he is usually neither working (this includes housework), nor relaxing, socializing, or eating. Often, the person describes him/herself as doing "nothing". Comsumption is uncommon and always confined to coffee. The episode occurs at a time described as stressful, though not as stressful as in work stress episodes. Though others may be present, no one is smoking. The exsmoker is usually experiencing withdrawal though anxiety is also often mentioned. The crisis is precipitated by negative affect, and is characterized by craving, feelings of deprivation, and wishes for self-indulgence.

Case History
Rosa G. had been a pack and a half smoker for 25 years before she quit. She had recently lost her job and ended a relationship, and so was spending the morning at home alone with nothing much to do but watch TV. She felt very anxious and "hyper". Some of her restlessness seemed due to having quit smoking four days ago. As her anxiety increased, she began to experience strong cravings to smoke, feeling she could almost "taste the cigarette in (her mouth." This craving continued for an hour and a half until she called the Stay-Quit Line.

An examination of the unclassified cases, or "misfits," shows that they typically fall into one of the five clusters, but differ in one or two respects

from the clusters' more typical members. In some cases, these idiosyncracies are significant, as when the situation is typical, but the affect of precipitatant does not fit the type. More often, the idiosyncracies are minor. One unclassified case, for example, fits well into the Party category, but refers to a "pot" party where no alcohol was consumed.

CONCLUSIONS

Relapse crises can be subdiveded into subspecies. The most important division hinges on the affective tenor of the situation. Some relapse crisis are crises in the usual sense of the word - difficult, tense periods when the person is under a great deal of stress. In some of these cases, the stressfulness of the situation - usually related to work - is clearly the predominant factor in the crisis. In other negative a-fect situations, the stress is more diffuse and withdrawal symptoms play a contributing role. It also appears as though negative affects associated with both over-arousal (e.g., anxiety) and under-arousal (e.g., boredom) play a role in relapse. The other class of relapse crisis occurs under pleasant circumstances and positive affect. One subspecies seems to reflect relatively pure craving and withdrawal phenomena in the absence of other relevant cues or precipitants. In another subtype, the act or process of relaxation itself appears to trigger the urge to smoke. Finally, the most homogenious subtype occurs when the exsmoker is faced with smoking--related stimuli when s/he has been drinking socially.

This typology has implications for both theory and treatment. The Horn-Tompkins typology of smoking motivations suggests that the enhancements of positive affects and dimunution affects are major motivators for smoking (Ikard, Green & Horn, 1969). The cluster analysis suggests this distinction is also critical in relapse. One might speculate that perhaps the type of relapse is related to the type of smoker. One readily researchable question is whether proneness to relapse in each of the five relapse promoting situations is related to the smoker's frequency of smoking in each of these situations. The propensity of "addictive"

smokers to undergo "addictive" relapses is also worth exploring.

The typology of relapse promoting situations also has some clinical utility. The field of smoking cessation has seen an increasing emphasis on self-management approaches to behavior change. A major self management strategy involves anticipating and preparing for the challenging situations. Awareness of the five relapse promoting situations outlined here could potentially help the exsmoker prepare for them and thereby avert relapse. The typology of relapse promoting situations could also provide a framework around which a formal smoking cessation program was structured. Participants could be educated about the nature of relapse promoting situations and could be trained in the skills necessary for coping with each of them. By improving our understanding of the challenges that exsmokers face in maintenance, this typology may thus increase our success in helping people quit and stay off smoking.

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FOOTNOTE

This research was supported by USPHS Grant DA01986 from the National Institute on Drug Abuse, M. E. Jarvik; Principal Investigator. The author gratefully acknowledges M. E. Jarvik's support and mentorship and the contributions of Laura Read, David Rapkin, and Joan Maltese.

A Typology of Relapse Situations

	Positive Affect			Negative Affect	
	'The Party'	'Relaxing at Home'	'Craving'	'Boredom, Depression'	'Work Stress'
Site	Out	Home	Work	Home	Varied
Time	Evening	Afternoon, Evening	Daytime	Morning	Afternoon
Activity	Socializing, Eating, Drinking	Eating, Drinking	Working, Socializing	Other: Working	Working
Alcohol and Food?	Yes	Usually	No	No	No
Others Smoking?	Yes	No	Yes	No	No
Stress	Low	Low	Low	High	Very high
Affect	Happy	Happy	Happy	Anxious, Depressed	Anxious, Angry
Withdrawal Symptoms?	No	No	Yes	Varied	No
Precipitants	Smoking Stimuli, Food and Alcohol	Food and Alcohol, Relaxation	Smoking Stimuli	Affect	Affect Stress